

duration, activation time, and action potential amplitude maps and performing regularization of the function over time.

19. The non-transitory computer readable medium of claim **16**, wherein initializing one or more cardiac electrical parameters of a computational cardiac electrophysiology model over the volumetric patient-specific anatomical heart model from the estimated transmembrane potentials on the epicardial surface of the patient-specific anatomical heart model comprises:

generating a surface estimation of each of the one or more cardiac electrical parameters on the surface of the patient-specific anatomical heart model based on the estimated transmembrane potentials on the epicardial surface of the patient-specific anatomical heart model; and

generating a respective 3D map of each of the one or more cardiac electrical parameters over the volumetric patient-specific anatomical heart model by interpolating the respective surface estimation of each of the one or more cardiac electrical parameters over the volume of the myocardium in the patient-specific anatomical heart model.

20. The non-transitory computer readable medium of claim **19**, wherein generating a surface estimation of each of the one or more cardiac electrical parameters on the surface of the patient-specific anatomical heart model based on the estimated transmembrane potentials on the epicardial surface of the patient-specific anatomical heart model comprises:

generating a 2D map of electrical diffusivity on the surface of the patient-specific anatomical heart model based on an activation time map of the estimated transmembrane potentials on the epicardial surface of the patient-specific anatomical heart model;

generating a 2D map of local depolarization time on the surface of the patient-specific anatomical heart model from an action potential duration map of the estimated transmembrane potentials on the epicardial surface of the patient-specific anatomical heart model; and

generating a 2D map of action potential amplitude from an action potential amplitude map of the estimated transmembrane potentials on the epicardial surface of the patient-specific anatomical heart model.

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